REMARKS

Entry of the foregoing amendments and favorable reconsideration and reexamination of the subject application, as amended, pursuant to and consistent with 37 C.F.R. Section 1.112, and in light of the remarks which follow, are respectfully requested.

By the present amendment, claims 3, 4, 6, 7, and 14 have been deleted. Claims 1, 8, 12, 13, 16 and 18 have been amended to further clarify the present invention. In view of these amendments, rejoinder of claim 8 is respectfully requested. Claims 32-34 have been added. Support for these new claims appears at least on page 11 lines 10 to 25 of the specification as filed.

Claims 1, 4, 12 and 19 and dependent claims 2, 6, 7, 13, 14, 17-18, 20, 21, 23, 30 and 31 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite and as not distinctly claiming the invention. Claims 4, 6, 7 and 14 have been cancelled. As far as this rejection may pertain to the claims currently of record, Applicants submit that this rejection has been obviated by the amendment of claims 1 and 12. As far as the remaining claims are concerned, this rejection is respectfully traversed.

In rendering this rejection, the Examiner deems that the term "one plant material" is unclear. Applicants have replaced the term "one plant material" by the term "a plant cell, a plant tissue or a seed of a plant" as defined at least on page 5 lines 19 to 21 in the specification as filed. The amendment of claim 1 renders the rejection moot.

The Examiner deems that claim 1 is indefinite for failing to recite any method steps for the process claimed. This rejection has been obviated by the amendment of claim 1, therefore this rejection should be rendered moot.

In rendering this rejection, the Examiner deems that the term "permitting transfer" is unclear in the context of an enzyme reaction since to "permit" requires a judgement. This rejection has been obviated by the amendment of claims 1 and 12, therefore this rejection is rendered moot.

Moreover, the Examiner deems that the word "oleaginous" is not clearly defined since this word has two meanings, i.e., either as relating to olive trees or as relating to oil. Applicants submit that the term "oleaginous" is defined at least on page 5 lines 12 to 15 in the specification as relating to "oleaginous plants such as colza, sunflower, peanut..." Furthermore, Applicants submit that the term "oleaginous" was well-known in the art at the date of filing of the application. Indeed, the skilled artisan could easily find in dictionaries the definition of "oleaginous" which refers to a cell that accumulates large amount of lipid.

In view of the above, withdrawal of this rejection is respectfully requested.

Claims 1, 2, 4, 6, 12-14, 17-21, 23, 30 and 31 have been rejected under 35 USC 112, first paragraph, as lacking written description. As far as the claims of record are concerned, this rejection is respectfully traversed.

In rendering this rejection, the Examiner deems that the specification only discloses the use of a cyclopropane fatty acid synthase gene to produce branched fatty acid and does not teach any other genes encoding enzymes which transfer one or more alkyl groups to an unsaturated fatty acid. The claims have been amended to recite that the recombinant nucleic acid encodes a methyl transferase. Applicants submit that the specification discloses methyl transferase at least page 8 lines 20 to 23 and SAM-methyl transferase at least page 7 lines 18 to 20.

Also, the examples and figures describe genetic constructs in which the nucleic acids coding for methyl transferase can be constructed. Indeed, Figure 3 teaches the skilled artisan how to construct a recombinant nucleic acid comprising a gene coding for a methyl transferase, for example, SAM. Furthermore, the specification teaches how to transform (step 3) a plant with a methyl transferase, how to culture and select (step 4) the transformed plant and how to analyse the transformants. Therefore, Applicants submit that the specification reasonably conveys to one skilled in the relevant art that the inventors at the time that this application was filed had possession of the claimed invention.

In view of the above, withdrawal of the rejection pursuant to 35 U.S.C. § 112, first paragraph is respectfully requested.

Claims 1, 2, 4, 6, 12-14, 17-21, 23, 30 and 31 have been rejected under 35 USC 112, first paragraph, as lacking enablement. Claims 4, 6 and 14 have been cancelled. As far as this rejection pertains to the remaining claims of record, this rejection is respectfully traversed.

In rendering this rejection, the Examiner deems that the transformation of tobacco with a cyclopropane fatty acid synthase gene does not provide enablement for the transformation of any plants for the production of branched fatty acids, particularly in colza, sunflower, peanut, soya, flax or maize. Applicants submit that the skilled artisan at the time of filing of this application could easily transform, without undue experimentation, plants other than tobacco such as colza, sunflower, peanut, soya, flax or maize by different transformation methods, such as those described in the specification, e.g., electroporation, particles bombardment and infiltration under pression, as well as *Agrobacterium tumefaciens*. For example, it was well known between 1992 and 1999 to transform various crops by *Agrobacterium tumefaciens* as indicated by the following publications: "Factors enhancing Agrobacterium tumefaciens

mediated gene transfer in peanut" Egnin, In vitro cell Dev Biol Plant 1998, 34(4):310-8 or "Agrobacterium tumefaciens mediated maize transformation" Huang, Shi Yan Sheng Wu Xue Bao, 1999, 32(4):381-9. Yet another example of transformation by electroporation as indicated by the following publications : "Stable transformation of maize after gene transfer by electroporation" Fromm et al. Nature February 1986 or "Factors influencing gene delivery into zea mays cells by high-velocity microprojectiles" Klein et al. Biotechnology vol.6 1988. Copies of these references can be provided upon request. Therefore, the skilled artisan knew of well known methods to transform different types of plants prior to the filing date of the present invention.

Furthermore, the Examiner deems that the claims drawn to enzymes that cause the transfer of one or more alkyl groups to the double bonds of an unsaturated fatty acid are also not enabled. However, the claims have been amended to recite that a recombinant nucleic acid coding for a methyl transferase have been introduced into a plant cell and the like. The examples and figures show such an example of a methyl transferase SAM (S-adenosyl methionine).

Moreover, the examples provides enabling guidance. Indeed, the specification discloses methyl transferase at least page 8 lines 20 to 23 and SAM-methyl transferase at least page 7 lines 18 to 20 and figure 3 teaches the skilled artisan how to construct a recombinant nucleic acid comprising a gene coding for a methyl transferase, for example SAM. Furthermore, the specification teaches how to transform (step 3) a plant with a methyl transferase, how to culture and select (step 4) the transformed plant and how to analyse the transformants.

Therefore, the specification provides guidance to a person skilled in the art sufficient to practice the presently claimed invention without undue experimentation. In view of the above, withdrawal of this rejection is respectfully requested.

Claims 1, 2, 4, 7 and 31 have been rejected under 35 U.S.C. § 102 (b) as being anticipated by Schmid with Plant Lipid Metabolism. For the following reasons, however, this rejection is respectfully traversed.

Schmid teaches the transformation of tobacco with the *Escherichia coli* CFAS under the cauliflower mosaic virus 35S promoter. The transformed tobacco produced dihydrosterculate as a nineteen carbon cyclopropane fatty acid, which product fails to be accumulated in seeds. Therefore, Schmid does not teach the transformation of a plant cell, seed or tissue with methyl transferase as in claim 1 of the present invention. Therefore, Applicants deem that the present invention is not disclosed by the publication of Schmid, and the rejection should be withdrawn.

Claims 1, 2, 4, 7, 12, 13, 17-21, 23, 30 and 31 have been rejected under 35 U.S.C. § 102 (e) as being anticipated by Schmid (US Patent 5,936,139). For the following reasons, however, this rejection is respectfully traversed.

US Patent 5,936,139 describes the transformation of oilseed crops with a recombinant nucleic acid comprising a promoter having higher levels of expression and tissue specificity, any bacterial CFAS gene and a polyadenylation sequence. The plants express the CFAS gene and produce lipids containing a cyclopropane ring, including dihydrosterculate. Applicants deem that amended claims are not disclosed by the US Patent 5,936,139 since the US Patent does not teach the transformation of plant with a methyl transferase.

Therefore, in view of the above, withdrawal of this rejection is respectfully requested.

Claims 1, 2, 4, 7, 12, 13, 17-19 and 31 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Schmid (Plant Lipid Metabolism 1995) taken with Benfey

et al. (US Patent 5,110,732). For the following reasons, however, this rejection is respectfully traversed.

In rendering this rejection, the Examiner deems that Schmid teaches the transformation of plant cells with a cyclopropane fatty acid synthase gene for the purpose of producing branched fatty acids in plant cells. Schmid also teaches the desirability of expressing the CFA enzyme in seeds but does not disclose the use of a seed specific promoters. According to the Examiner, Benfey et al. teach a seed specific promoter fragment of the CaMV 35 S. Therefore, the Examiner purports that a skilled artisan would express the CFA enzyme described by Schmid in seeds using the seed specific promoter of Benfey.

However, the publication of Schmid does not teach the transformation of plant cells with methyl transferase gene for the purpose of producing branched fatty acids in plant cells. Benfey et. al. add nothing to Schmid that would make the presently clamed invention obvious. For example, the publication of Benfey et al. does not propose to enhance the production of the methyl transferase in the seeds for seed oil production with the use of CaMV 35S. Neither Schimd nor Benfey et al. teach or suggest to transform plant cells with methyl transferase gene for the production of branched fatty acids in plant cells. Therefore, Schimd taken with Benfey et al. is insufficient to render the present claims obvious in this invention.

Thus, in view of the above, withdrawal of this rejection pursuant to 35 U.S.C. § 103 (a) is respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the

Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. Accordingly, Applicants request that claims 1, 2, 4, 6-8, 12-14, 17-21, 23, and 30-34 be allowed and the application passed to issue. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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MARKED-UP VERSION OF THE CLAIMS

Please amend the following claims :

1.(Twice Amended) A process for producing branched fatty acids, comprising :[producing said branched fatty acids from at least one plant cell or from one plant material or from a plant comprising at least one plant cell, said plant cell comprising in its genome a recombinant nucleic acid coding for an enzyme permitting transfer of one or more alkyl groups to the double bond(s) of an unsaturated fatty acid]

a. introducing a recombinant nucleic acid coding for a methyl transferase into a plant cell, a plant tissue or a seed of a plant;

b. regenerating a transgenic plant from the plant cell, the plant tissue or the seed of the plant wherein said transgenic plant produces branched fatty acids; and

c. recovering said branched fatty acids from said transgenic plant.

8. (Thrice Amended) The process according to Claim [4] 1, wherein the plant cell further comprises [in addition] a recombinant nucleic acid coding for an S-adenosyl methionine synthetase.

12. (Twice Amended) A recombinant nucleic acid comprising :

a nucleic acid coding for [an enzyme permitting] a methyl transferase [catalysing transfer of one or more alkyl groups to the double bonds of an unsaturated fatty acid],

a plant expressible promoter [regulating the expression of said nucleic acid and capable of causing the localized expression of this nucleic acid in certain plant tissues or certain plant parts], and, a 3' transcription termination region.

13. (Twice Amended) The nucleic acid according to Claim 12, wherein the promoter [is a promoter capable of causing localized expression of] expresses the nucleic acid in a seed of a plant.

16. (Thrice Amended) The recombinant nucleic acid according to Claim 12, wherein said nucleic acid further comprises a nucleic acid coding for [the] a S-adenosyl methionine synthetase.

18. (Thrice Amended) A plant cell comprising a recombinant nucleic acid [as defined in] according to Claim 12.